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SAVING BEANS FROM WATERY SOFT ROT

U. S. DEPARTMENT OF AGRICULTURE
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is most applicable to winter-vegetable sections, where the land is not cropped during summer months.

Soil Treatments.—Broadcast applications of calcium cyanamide at the rate of 1,000 pounds per acre have sometimes given very good results on marl soils but not on sandy soils. In preparation for such treatment, the soil should be well harrowed. The cyanamide should be broadcast in such a way that it completely covers the soil. It should be cut in with a disk harrow to a depth of about 3 inches. The treated area should not be planted until 60 days later. *Cyanamide injures germinating seed; therefore it must be broken down through chemical action in the soil before the treated area becomes safe for planting.*

Cultural Methods.—Since high humidity favors infection by the fungus causing watery soft rot, any method of bean culture that will lower the moisture around the plants will aid in reducing the disease. A field where the disease is found should not be irrigated more often than necessary. Wider spacing of rows and reduced rates of seeding, which will prevent the vines from matting early in the season and will allow better air circulation, are two other methods for lowering moisture in beanfields and thus checking development of the causal fungus.

Sanitation.—Many weeds, such as ragweed and milkweed, are known to be susceptible to watery soft rot. If these are allowed to grow along roads, ditches, and canals near beanfields, new sources of infection will be created. Such border areas should be kept free of weeds at all times. Beanfields that have been temporarily abandoned because of infection should likewise be kept free of weeds.

Infected bean straw and cull beans contaminated with sclerotia should not be fed to animals if the manure is to be used on land that will be planted to beans.

Screenings from bean-cleaning mills may contain large quantities of sclerotia and should be burned.

Crop Rotation.—When possible, infected beanfields should be planted for 2 years or more to crops that are not susceptible to the watery soft rot fungus. Such crops include small grains, corn, and hay. Although this is not likely to eliminate the trouble entirely, it will reduce losses on beans to a considerable extent. Likewise, beans should not follow crops or weeds that are known to have been seriously infected by the watery soft rot organism.

Precooling.—When snap beans are shipped to fresh-vegetable markets, losses in transit may be reduced materially by precooling the cars to 40° F. or below. It should be realized, however, that the causal fungus is not killed by this treatment and will begin to grow again as soon as infected beans are removed from the refrigerator cars and exposed to higher temperatures.

This leaflet was written by W. D. Moore, pathologist, and W. J. Zaumeyer, senior pathologist, Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration.

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